Direct mail programs work... but will health centers implement them? Findings from STOP CRC



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Key Points

- How effective is a direct-mail fecal testing program when implemented in busy community clinic practices as part of standard care?
- To report the effectiveness and level of implementation of an electronic health record (EHR)— embedded program to directly mail fecal tests to patients due for colorectal cancer screening.



Background

- The US Preventive Services Task Force recommends routine colorectal cancer screening for individuals aged 50 75.
- Programs that directly mail fecal tests to patients' homes have been shown to improve rates of colorectal cancer screening in various clinical settings.
 - Improvements have ranged from 6 40%.
- Little is known about the effectiveness of such programs when implemented in community health centers as part of standard care.



Previous direct-mail programs

Meta-Analysis of gFOBT or FIT outreach vs. usual care (n=11 studies)

Test Offered	Study	Events I Total				Fisk ratio and 95%Cl			
		Fisk ratio	Mailed	Usual Care					
AT	Singal 2015	1.98	1410/2400	355/1199			1.0		
AT	Gupta 2013	3.73	648/1593	471/3898					
AT	Myers2013	1.19	117/312	12/38			-		
AT	Hendren 2013	3.57	43/114	21/126			-	-	
AT	Levy 2013	4.48	107/187	33/185				-	
AT	Myers2007	I.63	185/386	135/387					
AT	-	2.10	2510/4992	1027/5833					
FOBT	Green 2013	2.46	760/1174	307/1167					
FOBT	Jean-Jacques 2012	6.03	32/104	5/98					
FOBT	Hoffman 2011	2.61	98/202	591/3184					
FOBT	Coronado 2011	14.40	44/168	3/165					
FOBT	Goldberg 2004	8.14	24/59	3/60					_
FOBT		3.26	958/1707	909/4674					
arquez E. Singh	S. Gupta S. Gastroenterolo	ogy. Vol. 150. ls	sue 4. S450: DDW 20	16	0.01	0.1	1	10	100
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Research

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Success of direct-mail programs

Kaiser Permanente Northern California

Levin TR Gastrointest Endosc. 2016 Mar;83(3):552-4.

Over 500,000 FITs mailed annually, with >60% returnedMajor contributor to achieving screening rate over 85%







Explanatory study vs. pragmatic study





Design, Setting, Participants

- Pragmatic cluster-randomized clinical study
 - Eligibility, 50-75, screening appropriate
 - Clinic visit in the past year
- 8 federally qualified health centers
 - 26 clinics (13 clinics randomized to each of 2 arms)
 - 41,000 patients
- Year 01 intervention interval: February 4, 2014 February 3, 2015
- Year 01 evaluation interval: February 4, 2014 -- August 3, 2015
- Lagged data interval: June 4, 2014 August 3, 2015



Clinic Locations

Participating clinics*

Open Door Community Health Centers (4) Multnomah County Health Department (6) La Clinica del Valle (3) Mosaic Medical (4) Virginia Garcia Memorial Health Center (2) Community Health Center Medford (3) Benton County Health Department (2) Oregon Health & Science University (OHSU) (2)

*Overall: colonoscopy screening in past 10 years: 5%; fecal testing in past year: 7.5%



Characteristics of health centers, by participation

		% Hispanic	CRC screening rate	% uninsured	
	Health Center 1	9	20	49	
	Health Center 2	7	23	38	
ating	Health Center 3	17	20	50	
icipa	Health Center 4	14	39	33	
Part	Health Center 5	10	33	40	
	Health Center 6	5	53	2	
ticipating	Health Center 7	2	33	11	
	Health Center 8	36	34	37	
	Health Center 9	4	16	23	
	Health Center 10	37	14	30	
-pa	Health Center 11	15	14	30	
Source: Coronado et al. 2015					

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STOP CRC intervention

EMR tools in Reporting Workbench, driven by Health Maintenance; Step-wise exclusions for:

- Invalid address
- Self-reported prior screening
- Completion of CRC screening Improvement cycle (e.g. Plan-Do-Study-Act)

Step 1: Mail Introductory letter Step 2: Mail FIT kit Step 3: Mail Reminder Postcard Center for

Research

Implementation support

- Real time EHR tools to identify patients eligible for each intervention step
- Training in the EHR tools
- Monthly meetings with EHR site specialists from each health center
- Leadership meeting to launch Plan-Do-Study-Act cycle
- Annual in-person meeting and quarterly webEx meetings of advisory board



Intervention materials



Dear Client,

There is an easy test that can find signs of colon cancer before you have symptoms. This test can be done at home and can save your life. You will get this test if you are between the ages of 50 and 74 and have not had a colonoscopy in the past 9 years.

Here is your Insure Fit test. Do the test at home and send it back to us. The test will look at the health of your colon to see if there is any blood in your poop. Finding these warning signs early gives you the best chance for successful treatment.

For the test:

- Start with a clean, empty toilet. Flush it once before you start. Make sure there are no cleaning products in the toilet water.
- Use 2 different poop samples. 1 for slot A, and a different 1 for slot 8.
- Write the date on the slicker at the time you do each test.
- Send back the test in the pre-paid yellow envelope in 3 days of finishing the test.

If you have any questions, please call your care team at 503-988-5558.

Thank you.

900000

Marty Grasmeder, MD Medical Director



Estimado(a) Cliente.

Existen análisis fáciles para encontrar señales de câncer de colon antes de que tenga síntomas. Estos análisis pueden hacerse en cosa y pueden salvar su vida. Usted recibiera este análisis si tiene entre 50 y 74 años de edad y no ha tenido una colonoscopía en los últimos 9 años.

Aquí esta su análisis Insure FIT. Haga lo en casa y devuélvanoslo. El examen verá la salud de su colon para ver si hay sangre en su popó. Encontrar estas señales de advertencia temprano le da la mejor posibilidad de un tratamiento exitaso.

Para el análisis:

- Empiece con un escusado limpio y vacío sin productos de limpieza en la agua. Jale la palanca de agua una vez antes de empezar.
- Use 2 muestras de popó diferentes. 1 para el lado A y 1 diferente para el lado
- Escriba la fecha en la efiqueta al momento de hacer cada lado.
- Devuelva el examen en el sobre amarillo dentro de 3 días siguientes de haber completado el análisis.

Si fiene cualquier pregunta, llame a su equipo de salud al 503-988-5558.

Gracias,

gartes

Marty Grasmeder, MD

Directora Médica MULTNOMAH COUNTY HEALTH DEPARTMENT #503-988-5558



尊貴的 客户端。

這是一個在您出現症狀前提前發現結腸癌復兆的簡單 測試,此測試可以在家中完成並可能挽救您的生命, 如果您的年齡在 50 到 74 歲之間,並且在過去 9 年內沒有接受過結腸鏡檢查,您就可以接受該測試。

以下是您的「確保健康」測試,在家完成該測試並將 其處交給我們,本測試將整着您的結腸健康狀態,並 檢視您的大便中是否有血,及早發現這些警報倍號可 為您提供成功治療的最佳機會。 麵於測試;

- 在乾淨的空馬桶內開始測試。開始之前沖廚一次,確保馬桶水內不含任何清潔用品。
- 使用2個不同的大便樣本。1 個樣本用於放置在A槽內,另1個樣本用於8 戶。
- 每次進行測試時,請在標籤上寫下日期。
- 將測驗樣本於測驗結束後的3
 天內裝在鄭資預付的黃色信封內寄回。

如果您存有任何疑問,請撥打電話 503-988-5558 聯絡您的照護團隊

萬分賦謝・

9 alphan

醫療副總監Marty Grasmeder, MD



A A A G

MULTNOMAH COUNTY HEALTH DEPARTMENT #503-988-5558



Узажаемый/узажаемаз Клиент!

Существует очень простой тест, который может распознать принаки рака къщечника еще до повмения какиснико симптамов. Он может быть проведен в домашник условики и может спасты вам хонзы. Вы сможете получить данный тест, если вам от 50 до 74 лет, и за последние 9 лет вы ни разу не проходили колоноскопно,

Ваш тест «Ілкигез прилагается к данному пакету. Проведите тест дома и вышите нам результаты. По данным результатам будет определено осстояние вашего кашечника и наижние крови в вашем кале. Обнаружение этих важных признаков на ранней стадии дает вам больше шансов на успешное личение.

Для проведения теста:

- Начните с подготовки унитаза: он должен быть пустой и чистый. Смойте его один раз перед тем, как начать. Удостоверьтесь, что вода в унитазе не содержит никаких чистящих средств.
- Используйте 2 разных образца кала. 1 для отделения «А», другой для отделения «В».
 Укажите на наклейке время проведения

каждого теста.

 В течение следующих 3 дней после окончания теста вышлите его результаты в оплаченном желтом конверте.

Если у вас есть какие-либо вопросы, пожалуйста, звоните обслуживающему вас медицинскому персоналу по телефону503-988-5558



Wordless instructions











Второй образец кала 大便二

2

3







5



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Kesearch

Main outcomes and measures

- Effectiveness: Clinic-level proportions of adults eligible for colorectal cancer screening during the intervention interval who completed fecal testing, and secondarily any CRC screening;
- Implementation: Clinic-level proportions of eligible adults who were mailed a fecal test as part of the program



Conceptual framework

Consolidated Framework for Implementation Research*





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*Damschroder et al., 2011

Baseline clinic-level characteristics of eligible adults in analysis sample (n = 41,193)

-	Intervention clinics	5	Usual care clinics	
	(n = 13)		(n = 13)	
	Median clinic % ^a	(range)	Median clinic % ^a	(range)
Age (50-64)	80	(73-85)	83	(72-88)
Gender (Female)	44	(38-56)	45	(35-51)
Ethnicity (% Hispanic)	8	(1-33)	15	(2-36)
Language				
English	90	(41-99)	86	(53-99)
Spanish	4	(0-26)	12	(1-31)
Other	0	(0-48)	1	(0-18)
Insurance status				
Medicaid	36	(20-51)	35	(25-54)
Medicare	24	(20-37)	23	(15-36)
Uninsured	26	(3-40)	27	(2-38)
Commercial	10	(1-49)	11	(1-39)
Federal poverty level				
<100%	47	(13-61)	45	(19-64)
100-150%	19	(6-31)	18	(14-24)
151 - 200%	9	(2-14)	9	(5-13)
201+	10	(3-26)	10	(2-36)
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Colorectal cancer screening completion, by intervention and usual care arm



Differences ranged from 3.8% for FIT completion in primary dataset to 5.8% for any CRC screening in lagged dataset



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Per protocol analysis

Per protocol	Return rate
Patients who were mailed a FIT	21%
Clinics that consistently delivered reminders	25%
Clinics that inconsistently delivered reminders	14%
Clinics that did not deliver reminders	6%



FIT completion and implementation, lagged dataset

Health Center	Differences in FIT completion*	% eligible patients mailed FIT
Health Center 1	21.2	81.7
Health Center 2	10.6	59.3
Health Center 3	7.7	43.3
Health Center 4	5.2	37.1
Health Center 5	3.6	26.3
Health Center 6	-2.0	33.2
Health Center 7	-5.4	38.5
Health Center 8	-11.7	21.0
ALL		42.1%

* Comparing intervention and usual care clinics within health center



Efficacy-Effectiveness gap





Clinic Maintenance by Health System





Maintenance

- N clinic randomized in STOP CRC: 26
- N clinics delivered STOP CRC in Year 2 (and beyond: 41 (22 randomized, 19 nonrandomized)



Trends in CRC screening





Conclusion

- Implementing mailed FIT outreach can increase screening rates in "real world settings."
- Findings confirm the major challenge of bridging the gap between efficacy studies and effectiveness studies.
- Given variation in clinics in the timing and extent of intervention delivery, this work offers the potential to understand more deeply the clinic level factors that facilitate and challenge successful implementation.



Future Growth

Implementation Analysis

Data Sources:

- EHR data (mailings, phone calls, diagnoses, procedures, NQF, etc.)
- Cost data provided by clinics included program compliance and fidelity questions
- Survey's, staff and leadership interviews at baseline and follow-up
- Project participation data from meetings, EPIC Jira tickets, logs for technical assistance, and training sessions



Did They Do It?

Implementation of Key Components of the Intervention

Health Center	Mailed FIT to Eliigible Patients (%)	Also Mailed Reminder Letters (Yes/No)	Net Increase FIT Compared to Control Clinic (%)
1	81.7%	Yes	21.2%
2	59.3%	Yes	10.6%
4	42.1%	No	7.7%
3	43.3%	No	5.2%
6	26.3%	Yes	3.6%
7	33.2%	No	-2.0%
8	38.5%	No	-5.4%
© 2011 Kaiser 5	37.1%	No	-11.7%



Factors Influencing Implementation (Inner Setting)

Health Center	Lab Issues	EHR Meeting Participation	Loss of Key Providers/ Staff	PDSA Type	Planning Additional PDSA	Net Increase FIT Uptake (%)
1	No	73%	Somewhat	Phone Call	No	21.2%
2	No	73%	Yes	Date on Label	No	10.6%
4	No	60%	No	Mail Prior to Visit	Yes	7.7%
3	No	60%	No	Intro letter or not	Yes	5.2%
6	No	80%	Yes	Work Flow	Yes	3.6%
7	No	40%	Yes	Work Flow	No	-2.0%
8	Challenges	27%	Yes	Pre-visit Planning	Yes	-5.4%
5	Challenges	53%	Yes	Mail Return	No	-11.7%



Factors Influencing Patient Completion

Health Center	Reminder Letter	Number FIT Samples	Patient Mail/Clinic Drop off	Net Increase FIT Uptake (%)
1	Yes	1	Mail	21.2%
2	Yes	2	Mail	10.6%
4	No	1	Mail	7.7%
3	No	1	Mail	5.2%
6	Yes	1	Clinic	3.6%
7	No	1	Mail	-2.0%
8	No	2	Mail	-5.4%
5	No	2	Clinic	-11.7%



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